AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A device for ~~reading~~ analyzing fluorescent signals ~~comprising:~~ emitted from fluorescently labeled material bound to a microarray assay of the type having at least one microspot deposited on a substantially flat surface, the device comprising:

an illuminator for illuminating ~~a material bound with a fluorophore,~~ the fluorescently labeled material at an appropriate wavelength to induce fluorescence;

a detector for detecting fluorescent signals emitted by the fluorescently labeled material;

a signal processor for processing the signals detected;

~~the device defining~~ an optical system having an excitation optical path and a detection optical path; ~~characterised in that~~

the illuminator ~~comprises~~ comprising a light emitting diode ~~that~~ arranged to illuminate[[s]] the material with incoherent illumination [[;]] and to

~~the material comprises a microarray assay comprising a plurality of microspots;~~

~~the material is deposited on a substantially flat surface and the illuminator~~ simultaneously illuminate[[s]] all, or a substantial portion of, ~~one of the~~ at least one microspot[[s]].

2. (Currently Amended) A device according to claim **1** further comprising an excitation filter positioned in the excitation optical path to filter out longer wavelengths emitted by the LED before they reach the material to be ~~analysed~~ analyzed.

3. (Original) A device according to claim **2** wherein the excitation filter comprises a short band pass interference filter.

4. (Original) A device according to claim **1** further comprising an emission filter positioned in the detection optical path to filter out any directly reflected illumination from the material.

5. (Original) A device according to claim **1** wherein the substantially flat surface comprises a glass slide.

6. (Currently Amended) A device according to claim **1** further comprising a ~~polarising~~ polarizing filter positioned in the excitation optical path ~~to be perpendicular to the input polarization~~ and a second ~~polarising~~ polarizing filter positioned in the detection optical path and orientated at right angles to the first ~~polarising~~ polarizing filter such that the two filters comprise crossed ~~polarisers~~ polarizers positioned in the excitation and the detection optical paths respectively.

7. (Currently Amended) A device according to claim **1** further comprising a ~~polarising~~ polarizing beam splitter positioned to lie in both the excitation and detection optical paths.

8. (Original) A device according to claim **1** wherein the signal processor comprises a phase sensitive detector.

9. (Cancelled).

10. (Currently Amended) A method of ~~analysing~~ analyzing signals emitted from a ~~sample of~~ fluorescently labeled material ~~bound with a fluorophore~~, wherein the material is bound to at least one microspot deposited on the substantially flat surface of a microarray, the method comprising the steps of:

~~illuminating the sample at an appropriate wavelength to cause fluorescence in the sample;~~

~~detecting fluorescent signals emitted by the sample once the sample has been illuminated;~~

~~analysing signals detected by the detector, characterised in that~~

~~the sample is illuminated with incoherent illumination using a light emitting diode (LED), the material comprises a microarray assay comprising a plurality of microspots; the material is deposited on a substantially flat surface and in that all, or a substantial portion of one of the microspots is illuminated simultaneously~~

providing incoherent illumination derived from a light emitting diode (LED) at an appropriate wavelength to cause fluorescence from the fluorophore in the at least one microspot;

illuminating simultaneously all or a substantial portion of the at least one microspot with the incoherent illumination;

detecting with an optical detector the fluorescence emitted by the at least one microspot once the at least one microspot has been illuminated.

11. (Cancelled).

12. (Cancelled).

13. (New) A device according to claim **1** further comprising an oscillating electrical source driving the light emitting diode such that the intensity of light from the diode is modulated in time.

14. (New) A device according to claim **1** wherein a the fluorescently labeled material is bound to plural microspots, and the microspots are deposited in an array on the substantially flat surface.

15. (New) A device according to claim **1** wherein the substantially flat surface comprises a plate used for microarray assay or immunoassay type tests.

16. (New) A device according to claim **1** wherein the light emitting diode illuminates an area at the location of the microspot, the area having a diameter of about 200 microns.

17. (New) A device according to claim **1** wherein the light emitting diode illuminates an area at the location of the microspot, the area having a diameter between about 50 microns and about 450 microns.

18. (New) A device according to claim **1**, wherein the diameter of the microspot is about 200 microns.

19. (New) A device according to claim **1**, wherein the diameter of the microspot is between about 50 microns and about 450 microns.

20. (New) A device according to claim **1** wherein the signal processor comprises a lock-in amplifier combined with a voltage meter.

21. (New) A method according to claim **10** further comprising:

modulating the intensity level of the incoherent illumination from the LED; and

processing the signal from the optical detector with phase-sensitive detection instruments.

22. (New) A method according to claim **10** further comprising:

providing fluorescently labeled material bound to plural microspots, the microspots deposited in an array on a substantially flat surface.

23. (New) A method according to claim **10** further comprising:

placing an excitation filter in an excitation optical path between the LED and the at least one microspot, the excitation filter substantially preventing longer wavelengths emitted by the LED from reaching the at least one microspot.

24. (New) A method according to claim **10** further comprising:

placing a short band pass interference filter between the LED and the at least one microspot.

25. (New) A method according to claim **10** further comprising:

placing an emission filter in a detection optical path between the at least one microspot and the optical detector, the emission filter substantially preventing any illumination directly reflected from the sample from reaching the detector.

26. (New) A method according to claim **10** further comprising:

placing a polarizing filter in an excitation optical path between the LED and the at least

one microspot; and

placing a second polarizing filter in a detection optical path between the sample and the detector, the second polarizing filter optically orientated substantially 90 degrees to the first polarizing filter such that the two filters comprise crossed polarizers positioned in the excitation and the detection optical paths.

27. (New) A method according to claim **10** further comprising:

placing a polarizing beam splitter at a location having coincidence of an excitation optical path between the LED and the at least one microspot and a detection optical path between the at least one microspot and the detector.